Office Supreme Court, U. S.
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CHARLES ELMORE CROPLEY
CLERK

IN THE

Supreme Court of the United States

STATE OF WISCONSIN, STATE OF MINNESOTA, STATE OF OHIO, and STATE OF PENNSYLVANIA, *Complainants,* *vs.* STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, *Defendants.* STATE OF MISSOURI, STATE OF KENTUCKY, STATE OF TENNESSEE, STATE OF LOUISIANA, STATE OF MISSISSIPPI, and STATE OF ARKANSAS, *Intervening Defendants.*	No. ~~5~~ 4 Original.
STATE OF MICHIGAN, *Complainant,* *vs.* STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, et al., *Defendants.*	No. ~~8~~ 5 Original.
STATE OF NEW YORK, *Complainant,* *vs.* STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, et al., *Defendants.*	No. ~~9~~ 6 Original.

SEMI-ANNUAL REPORT OF THE SANITARY DISTRICT OF CHICAGO OF JULY 1, 1935. MADE PURSUANT TO DECREE OF APRIL 21, 1930.

FRED KLEIN CO., 24 PRINTERS, CHICAGO.

IN THE

Supreme Court of the United States

Nos. 5, 8 and 9, Original.

October Term, 1934.

STATE OF WISCONSIN, STATE OF MINNESOTA, STATE OF OHIO, and STATE OF PENNSYLVANIA, *Complainants,* vs. STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, *Defendants.* STATE OF MISSOURI, STATE OF KENTUCKY, STATE OF TENNESSEE, STATE OF LOUISIANA, STATE OF MISSISSIPPI, and STATE OF ARKANSAS, *Intervening Defendants.*	No. 5, Original.
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SEMI-ANNUAL REPORT OF THE SANITARY DISTRICT OF CHICAGO OF JULY 1, 1935. MADE PURSUANT TO DECREE OF APRIL 21, 1930.

Pursuant to provisions of paragraph numbered 5 of the Decree in the above entitled causes, entered on April 21, 1930, the Defendant, The Sanitary District of Chicago, hereby makes its semi-annual report of July 1, 1935, as follows:

CONSTRUCTION PROGRAM.

In the semi-annual report of January 1, 1935, the status of completed work in the sewage treatment construction program involved in this case was stated to be on December 1, 1934, as follows:

TABLE 1.

COMPLETED WORK AS OF DECEMBER 1, 1934.

Calumet Project	$ 24,085,344.90
North Side Project	37,122,381.52
West Side Project	45,279,919.83
Southwest Side Project	358,614.68
West-Southwest Treatment Plant	228,940.21
Miscellaneous Plants and Sewers	596,188.86
Chicago River Controlling Works	53,415.74
Total	$107,724,805.74

TABLE 2.

FUTURE WORK AFTER DECEMBER 1, 1934.

Calumet Project	$ 11,544,000.00
North Side Project	5,375,000.00
West Side Project	8,947,000.00
Southwest Side Project	39,561,000.00
West-Southwest Treatment Plant	35,278,000.00
Miscellaneous Plants and Sewers	2,000,000.00
Chicago River Controlling Works	3,200,000.00
Total	$105,905,000.00

During the interim of six months between the date of the last report and the present report a considerable amount of construction work has been accomplished on the Calumet and West Side Projects and a reasonable start has been made on the Southwest Side Project.

Calumet Project. Construction was continued on the following contracts mentioned in the last semi-annual report: the Calumet Pumping Station and Blower House, now 95 per cent completed; the Aeration Tanks, Operating Galleries, Final Settling

Tanks, etc., now 98 per cent completed; the Preliminary Settling Tanks, Sludge Concentration Tanks, Screen House, Meter Vault, etc., now 98 per cent completed; the Blower Units, now 91 per cent completed; the Connecting Conduits between the old and new Calumet pumping station and the new sewage treatment plant, now 85 per cent completed; the Sewage Pumping Units, now 100 per cent completed; the manufacture and delivery of the Diffuser Plates to be installed in the aeration tanks, now 100 per cent completed; and on the Harvey Sewer, now 98 per cent completed.

Bids for the construction of the Sludge Dewatering and Incinerating Plant and for Underground Duct Lines to supply power to the plant were taken May 16, 1935 and four contracts were awarded June 6, 1935 for this work. These contracts are: Division J, Building and Miscellaneous Work; Division K, Sludge Disposal Equipment and Piping; Division L, Electrical Equipment; and Division M, Underground Duct Lines. Construction work has already started and will be completed before the end of 1935. Plans are being prepared for roadways, grading, drainage, lighting, etc., the final clean-up contract for the Calumet Treatment Works. It is expected that the Calumet Treatment Works will be placed in operation in the fall of 1935. Certain sewers in the Calumet Region are yet to be constructed whenever finances become available.

West Side Project. Construction was continued on the following sewer contracts mentioned in the last Semi-annual Report to the Court: West Side Sewer, Contract 3, now 100 per cent completed; West

Side Sewer, Contract 4, now 64 per cent completed; West Side Sewer, Contract 5, now 100 per cent completed; West Side Sewer, Contract 6, now 88 per cent completed; West Side Sewer, Contract 7, now 88 per cent completed; West Side Sewer, Contract 8, now 100 per cent completed; West Side Sewer, Contract 9, now 45 per cent completed; and West Side Sewer, Contract 10, now 66 per cent completed. All of this work mentioned will easily be completed before the end of 1935 with the possible exception of West Side Sewer, Contract 4.

Battery C of the Imhoff Tanks was completed and placed in operation April 29, 1935. Contract Section 3 of the West Side Sewer was placed in service June 14, 1935.

Operation of the experimental Sludge Filtering and Drying Unit at the West Side Sewage Treatment Works has been continued and considerable more progress made in the development of the process of disposal of sludge by mechanical dewatering and incineration.

West-Southwest Treatment Plant. As stated in the last semi-annual report to the Court, bids for furnishing Steam Turbine driven Pumping and Blower Units for the West-Southwest Treatment Works were received December 27, 1934. Two contracts for these units were awarded February 14, 1935. Bids for the construction of Aeration Tanks, Operating Galleries, Final Settling Tanks, etc., were received March 28, 1935 and the contract for the same was awarded April 11, 1935. Bids for furnishing Sludge Removal Mechanisms were received March 28, 1935

and the contract awarded April 11, 1935. Bids for furnishing Venturi Meters were received March 28, 1935 and the contract awarded April 4, 1935. Bids for furnishing Large Valves were received March 28, 1935 and the contract awarded April 11, 1935. Bids for Electrical Work in connection with the Aeration Tanks, Operating Galleries, Final Settling Tanks, etc., were received June 6, 1935 and the contract awarded June 14, 1935. Bids for the construction of the Substructure of the Pumping Station and Blower House were received April 4, 1935 and the contract for the same was awarded April 18, 1935. Plans are being prepared for the Superstructure of the Pumping Station and Blower House, for Conduits and Preliminary Settling Tanks, etc. Studies are being made for the Sludge Dewatering and Incinerating Plant. Actual construction work was started on the Aeration Tanks April 29, 1935 and on the Pumping Station Substructure May 20, 1935.

Southwest Side Project. As stated in the last semi-annual report to the Court, bids for the construction of Section 2 of the Southwest Side Intercepting Sewer were received December 27, 1934. The contract for this work was awarded February 14, 1935 and actual construction work was started March 11, 1935. Bids for the construction of Section 3 of the Southwest Side Intercepting Sewer (from Crawford Avenue to Western Avenue) were received March 14, 1935, the contract was awarded March 21, 1935 and actual construction work was started May 13, 1935. Bids for the construction of Section 1 of the Southwest Side Intercepting Sewer were received June 27, 1935. This section extends from the West-Southwest Treatment Works to a connection with the West Side

Sewer near Laramie Avenue, then under the Main Drainage Canal to connect with Section 2 of the Southwest Side Sewer. The contract also involves the construction of the Screen Chamber for the West-Southwest Pumping Station. Plans are practically completed for Section 4 of the Southwest Side Intercepting Sewer (from Western Avenue to Racine Avenue) and it is expected that bids will be taken early in August, 1935. Considerable preliminary work has been done on Sections 5 and 6 of the Southwest Side Sewer.

Activated Sludge Patent Suit. In the suit of Edgar C. Guthard, Activated Sludge, Ltd., and Activated Sludge, Inc., versus The Sanitary District of Chicago, in the United States District Court for the Northern District of Illinois, Eastern Division (In Equity No. 4280), mentioned in the last report to the Court, Judge Lindley denied a petition for a rehearing on February 8, 1935. On February 8, 1935, an interlocutory decree was rendered against the Sanitary District in favor of the Activated Sludge, Inc. An appeal to the United States Circuit Court of Appeals for the 7th Circuit was prayed by the Sanitary District on March 9, 1935.

While the suit against the Sanitary District has no direct bearing at present on the progress of the sewage treatment program, it is mentioned herein so that the Court may be advised of another element which tends to obstruct progress and may (if the patents are upheld) increase the cost of the works.

Packingtown Situation. The field work on the survey of the Stockyards and Packingtown mentioned in

the last report to the Court started with active sampling and gaging on February 18, 1935. The representatives of the Packing interests are cooperating in this survey. To date, the sewer outlets of 10 firms have been tested. The survey will probably require at least three months longer.

On May 1, 1935, a bill was introduced in the General Assembly of the State of Illinois (known as House Bill No. 938, of the 59th General Assembly), amending the Sanitary District Act to grant police power to control the discharge of industrial wastes and to permit a charge being made for the conveying, pumping, treatment and disposal of industrial waste. All establishments discharging over 3,650,000 gallons of industrial waste per year are affected. The bill has been approved by the House of Representatives and is now pending before the Senate.

Financial. The financial condition of The Sanitary District of Chicago has changed but little since the time of the last report to the Court. The local tax situation has improved slightly. The amounts of taxes extended for the Sanitary District for the years 1928, 1929, 1930, 1931, 1932 and 1933 and the amounts collected up to May 31, 1935, pursuant to these extensions, are as follows:

Year	Total Taxes Extended	Amount Collected	Amount Unpaid	Percentage Unpaid
1928.....	$ 19,448,392.46	$17,307,124.49	$ 2,141,267.97	11.01%
1929.....	24,466,998.58	20,111,872.85	4,355,125.73	17.80%
1930.....	22,453,699.40	16,840,274.55	5,613,424.85	25.00%
1931.....	20,517,561.90	14,860,870.08	5,656,691.82	27.57%
1932.....	19,281,643.24	12,498,361.12	6,783,282.12	35.18%
1933.....	18,037,167.48	10,346,119.28	7,691,048.20	42.64%
	$124,205,463.06	$91,964,622.37	$32,240,840.69	25.96%

The amount, $91,964,622.37, shown in the foregoing table, is the amount of Sanitary District taxes collected by the County Collector. Of this amount, $88,253,531.40 has been turned over to the Sanitary District.

The taxes collected since the time of the last report to the Court amount to $12,593,850.91, which is about 10.1 per cent of the taxes levied and due. This money was used to redeem tax anticipation warrants, to pay current expenses and to pay defaulted interest and principal of bonds. The non-payment of these taxes to the extents indicated above has forced the Sanitary District, through lack of revenue, to default on a considerable amount of maturing principal on bonds used for construction work due from January 1, 1932 to June 1, 1935, inclusive, and a certain amount of interest on these bonds. The amounts in default, as of June 1, 1935, are:

Principal	$15,738,390.00
Interest	1,110,460.00
Total	$16,848,850.00

The amount in default has been reduced by $2,619,885.00 since the time of the last report.

Reference was made in last report to the Court to negotiations between the Sanitary District of Chicago and the Federal Emergency Administration of Public Works leading up to a Supplementary Agreement providing for the re-allocation of certain funds of the $41,938,000 obtained by the Sanitary District from the Public Works Administration. This Supplementary Agreement was approved by the Board of Trustees of the Sanitary District March 7, 1935 and by the Administrator of the Federal Emergency

Administration of Public Works April 4, 1935. Work is now proceeding in accordance with the terms of this Supplementary Agreement.

Under the provisions of the Agreements between the Sanitary District of Chicago and the Public Works Administration the Sanitary District is to receive a Grant, limited to $12,000,000, when the total of $41,938,000 shall have been expended on construction work. As the amounts making up this Grant are earned, at six months intervals, bonds of the Sanitary District, now owned by the Government, in amounts equal to the amounts earned under the Grant provisions are to be set aside and held by the Government until the end of the periods covered by the Agreements and the bonds so held then delivered to the Sanitary District. The net result of these operations will be a net expenditure of $29,938,000 by the Sanitary District, which when added to the amount of the Grant, $12,000,000, will make up the total of $41,938,000. On June 12, 1935 the Sanitary District filed with the Federal Emergency Administration of Public Works an Application to increase the allocation of funds to the Sanitary District to $58,630,000, under which the Government would retain all of the $41,938,000 of bonds of the Sanitary District and advance the Grant, in cash, to be applied to sewage treatment construction work. If this Application is approved and the net expenditure of the Sanitary District thus becomes $41,938,000, then the possible Grant to be earned according to the ratios in the present Agreements will be $16,692,000. A list of additional sewage treatment construction projects, estimated to cost $16,692,000, has been submitted in

the aforesaid Application. All of these projects submitted are parts of the program proposed by the Sanitary District during the trial of the case.

As stated in the last report to the Court the Sanitary District of Chicago initiated steps to bring about the purchase by the Federal Government of the waterway improvements applicable to navigation in the South Branch of the Chicago River, the Little Calumet River, the Main Channel and the Calumet-Sag Channel. A public hearing on this matter before the United States District Engineer in Chicago December 19, 1934 was continued until January 15, 1935. At this continued public hearing, representatives of the Attorneys General of the States of Ohio, Michigan, Minnesota and Wisconsin appeared and presented formal opposition to the purchase of these channels by the Government. The Sanitary District Act was amended by the Illinois Legislature at the 1935 session, giving the necessary legal authority to make the sale. No recommendation to Congress has yet been made by Engineers of the War Department.

The total work accomplished by The Sanitary District of Chicago in the construction of sewage treatment works during the period from December 1, 1934 (the date of the summaries for the last report) to June 1, 1935 (the date of the summaries for this report) as measured by construction expenditures was as follows:

TABLE 3.

Calumet Project	$1,742,323.40
North Side Project	4,526.08
West Side Project	4,044,968.49
Southwest Side Project	99,411.59
West-Southwest Treatment Plant	133,996.61
Miscellaneous Plants and Sewers	7,591.07
Total	$6,032,817.24

In addition to the amounts shown in Table 3, approximately $944,000 had been earned by contractors up to June 1, 1935, on the various items of work but is retained by the Sanitary District as reserved percentage until the final completion of the contracts.

By adding the various items indicated in Table 3 to corresponding items in Table 1, the completed portion of the sewage treatment construction program on June 1, 1935, is, as follows:

TABLE 4.

COMPLETED WORK AS OF JUNE 1, 1935.

Calumet Project	$ 25,827,668.30
North Side Project	37,126,907.60
West Side Project	49,324,888.32
Southwest Side Project	458,026.27
West-Southwest Treatment Plant	362,936.82
Miscellaneous Plants and Sewers	603,779.93
Chicago River Controlling Works	53,415.74
Total	$113,757,622.98

Because of the low construction prices prevailing during the past year, there has been a considerable saving on the work placed under contract during the past six months. Such savings amounted to $2,463,000 on the West-Southwest Sewage Treatment Plant and on the Southwest Side Sewers. A re-estimate of the plans of the future construction program resulted in a reduction of $1,073,000 more. The estimated cost of future sewage treatment construction, as of June 1, 1935, is as follows:

TABLE 5.

FUTURE WORK AFTER JUNE 1, 1935.

Calumet Project	$ 8,734,000
North Side Project	5,000,000
West Side Project	4,117,000
Southwest Side Project	39,672,000
West-Southwest Treatment Plant	33,621,000
Miscellaneous Plants and Sewers	1,992,000
Chicago River Controlling Works	3,200,000
Total	$96,336,000

SEWAGE TREATMENT.

The population of The Sanitary District of Chicago, as of July 1, 1935, is about 4,358,000, according to estimates made from the figures of the 1930 census. The industrial wastes in the Sanitary District are assumed to be equivalent to the sewage of 1,757,000 additional persons. Hence, the total population and industrial wastes equivalent amount to 6,115,000. This figure includes the Corn Products wastes, equivalent to the sewage of 382,000 persons, which wastes have been greatly reduced, as a result of certain experimental work initiated by the Sanitary District.

The 1935 total population, and industrial waste equivalent, as above indicated, are estimated as 6,115,000. Up to date, the Sanitary District has assumed that so-called complete sewage treatment could produce an annual average of 85 per cent purification. Hence, so-called complete treatment for the total January 1, 1935, population and industrial wastes equivalent would equal the 100 per cent treatment of the sewage of 5,198,000, which is 85 per cent of 6,115,000.

The expenditures for sewage treatment have been indicated in Tables 1, 3 and 4. The amounts of actual sewage treatment in operation on December 24, 1934 (as of the time of the last report to the Supreme Court) and at the present time are shown in Tables 6 and 7, following:

TABLE 6.

ACTUAL SEWAGE TREATMENT IN OPERATION AS OF DECEMBER 24, 1934.

Treatment Works	Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis
Calumet:			
(Complete treatment)	15,000	85	13,000
(Sedimentation)	224,000	33⅓	74,000
North Side	1,150,000	85	977,000
West Side (Sedimentation)...	770,000	33⅓	257,000
Miscellaneous (Morton Grove, Glenview, Northbrook)	7,000	85	6,000
Corn Products (Reduction)...	371,000		284,000
Total.....	2,537,000		1,611,000

TABLE 7.

ACTUAL SEWAGE TREATMENT IN OPERATION AS OF JUNE 25, 1935.

Treatment Works	Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis
Calumet:			
(Complete treatment)	15,000	85	13,000
(Sedimentation)	228,000	33⅓	76,000
North Side	1,167,000	85	992,000
West Side (Sedimentation)...	883,000	33⅓	294,000
Miscellaneous (Morton Grove, Glenview, Northbrook)	7,000	85	6,000
Corn Products (Reduction)...	382,000		316,000
Total.....	2,682,000		1,697,000

The extent of the operation of sewage treatment plants at the present time is equal to the 100 per cent treatment of the sewage of 1,697,000 out of 5,198,000 persons, which would be the present possible 100 per cent treatment if the sewage of the total population and industrial wastes equivalent of 6,115,000 were being treated. This indicates the actual treatment of approximately 32.6 per cent of the total sewage within the Sanitary District, although considerable

additional construction work has been performed during this period, for which no credit will be taken in this percentage until the works are completed and put in operation.

DIVERSION OF WATER.

The net diversion of water from Lake Michigan during the calendar year 1934, averaged 6,433 cubic feet per second. The domestic pumpage of the Chicago metropolitan area during this period averaged 1,692 cubic feet per second; and the total flow from the Main Channel at Lockport averaged 8,125 cubic feet per second.

Diversion of water from Lake Michigan by the Sanitary District of Chicago since July 1, 1930, has been made in accordance with a Permit from the Secretary of War, dated June 26, 1930, which authorized the diversion of water as specified in the Decree of the Supreme Court, handed down April 21, 1930. This limits the net diversion to an annual average of not more than 6,500 cubic feet per second up to December 31, 1935. The average monthly diversion as made under this Permit from January 1 to June 20, 1935, is indicated in the table following:

Month 1935	Total Flow From Main Channel At Lockport C.F.S.	Inflow From Willow Springs Spillway C.F.S.	Domestic Pumpage Chicago Metropolitan Area C.F.S.	Net Diversion From Lake Michigan C.F.S.
January	8312	0	1631	6681
February	8325	0	1614	6711
March	8247	12	1567	6668
April	8376	1	1579	6796
May	8360	69	1561	6730
June 1 to 20..	8340	0	1600	6740
Average	8327	14	1542	6721

While the average diversion for the first half of the year 1935 is greater than 6,500 C. F. S., the annual average will be maintained below the allowable maximum by reducing the diversion during the remainder of the year.

All of which is respectfully submitted,

THE SANITARY DISTRICT OF CHICAGO,

By ROSS A. WOODHULL,
President.

PHILIP HARRINGTON,
Chief Engineer.

ELMER J. WHITTY,
Acting Attorney.

Attest:

JAMES J. SULLIVAN,
Clerk.